

This study was performed by IDEXX BioResearch, Columbia, Missouri.

Study Design:

For this study, an Optimice® IVC rack was used in an experimental design similar to that published by IDEXX BioResearch (1). For 12 weeks, the rack was populated with cages of infected and uninfected mice (referred to as 'colony' mice) to emulate a rack with low to moderate disease prevalence with the following pathogens: MNV, MHV, MPV, *Helicobacter*, *Pasteurella pneumotropica*, fur mites, enteric protozoa and pinworms. Over the course of 12 weeks, fecal samples and fur swabs from infected mouse cages were collected and tested by real-time PCR to monitor pathogen shedding over the course of the study. At study end, colony and sentinel mice were bled to screen for viral antibodies. Additionally, fur swabs and fecal samples from colony and sentinel mice were tested for bacterial and parasite infections.

(1) Bauer BA, Besch-Williford C, Livingston RS, Crim MJ, Riley LK, and Myles MH. Evaluation of rack design and disease prevalence on detection of rodent pathogens in exhaust debris samples from individually ventilated caging systems. J Am Assoc Lab Anim Sci. 2016 Nov;55(6):782-788.

Animal Care Systems Cage Exhaust Filter								
	Infected mice							Uninfected mice *
Agent	0w	2w	4w	6w	8w	10w	12w	12 w
MNV	8/10	7/10	7/10	7/10	7/10	7/10	3/10	0/30
MPV	5/5	5/5	5/5	5/5	4/5	5/5	4/5	0/30
MHV	5/5	5/5	2/5	0/5	0/5	0/5	0/5	0/30
<i>Helicobacter spp.</i>	5/5	5/5	5/5	5/5	5/5	5/5	5/5	0/30
<i>P. pneumotropica</i>	5/5	5/5	5/5	5/5	5/5	5/5	5/5	0/30
<i>E. muris</i>	5/5	5/5	5/5	5/5	5/5	5/5	5/5	0/30
<i>T. muris</i>	3/5	2/5	3/5	3/5	3/5	3/5	2/5	0/30
Pinworms	5/5	5/5	5/5	5/5	5/5	5/5	5/5	0/30
Furmites	5/5	5/5	5/5	5/5	5/5	5/5	5/5	0/30

* Results/Conclusion:

Mice infected with the above pathogens were housed on the same rack as uninfected mice. Uninfected mice remained uninfected for the duration of the 12 week study. Infected mice remained infected with only the pathogen(s) they were infected with at the start of the study. There was no cross-contamination of the pathogens tested between cages housed on the same rack.